THE

SOUTHERN AGRICULTURIST.

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PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*An Essay on the Culture of the Grape Vine, and making of Wine; suited for the United States, and more particularly for the Southern States.* By N. HERBEMONT, of Columbia, S. C.

"And Noah began to be an husbandman, and he planted a vineyard."—
GENESIS c. ix. v. 20.

IF it were necessary, at this period of the existence of man, to prove the utility and great importance of the cultivation of the vine, its antiquity would, perhaps, be sufficient for this purpose. It is mentioned in the Bible, this most ancient record of the transactions of man on this earth, and we believe it is the first article of culture specifically noticed after the deluge: "And Noah began to be an husbandman, and he planted a *Vineyard*." It is subsequently and frequently mentioned throughout the Sacred Writings, sometimes exhibiting the great goodness of God, at other times as being the very type of fruitfulness, of abundance, and of the best temporal gift to man by his Creator. That we are apt to abuse every thing given us for a blessing, is but too true, and the celebrated patriarch, here above cited, is a very notable instance of this, as he was the first to avail himself of the benefit, and to convert it to his shame. It is, however, no reason, that we must not use a good thing because it is sometimes abused, and it is very doubtful whether there is not more criminality in neglecting to avail ourselves of the benefits lavished upon us by a bountiful Providence, than to use them, even at the risk of doing

so sometimes indiscreetly. We must exert our best endeavours to use and not abuse those valuable gifts. By doing this, we show our gratitude in the only manner possible for us. The Vine has been given to man that it may enliven his spirits, gladden his heart, produce cheerfulness and good fellowship in society, and enable him to support unavoidable afflictions, under which he would frequently sink in despair. If, in doing this, poor man accidentally exceeds the proper bounds, he ought, with sincerity and humility, acknowledge the weakness of his nature, try his best abilities to avoid the recurrence of an accident, which, if frequently repeated, may become an inveterate habit, and lead him to shame and ruin. We would ask of the timid advocates of perfect abstemiousness, whither the principles that actuates them would lead them? Is there any one thing which we may not, and do not often abuse? Shall we, therefore, cease to eat bread, because an excess of it has sometimes been found injurious? We must cease to drink water, because man may be drowned in it. What merit has the secluded monk or hermit in not yielding to temptations that do not exist for him? "*A vaincre sans péril, on triomphe sans glorie.*"

Paradoxical as it may appear, it is nevertheless true, that where wine is most abundant, there is found most sobriety. There drunkenness is scarcely known, with all its long and dreadful train of evils. There cheerfulness, the dilatation of the spirits is productive of all those good feelings in the breast of man, which keep off from the circle of his social intercourse, all feuds, quarrels, envy, all the brutal passions of our nature, and that selfishness, productive of so many evils in society. Habitual cheerfulness produces kindness, benevolence, charity, forbearance, and to crown all, a happy and healthy long life. In short, exclude intoxication, and tell me where happiness is to be found more frequently, than in a circle of neighbours, relatives and friends, with really sound, light and unadulterated wine circulating moderately amongst them. There the lively song is heard with pleasure, the innocent and witty repartee gives zest to conversation. There the old delight in relating the feats and prowess of their youth, and the young, with due respect for age, listen attentively, and determine to strive with all their might, even to exceed their sires in all their exercises of manhood, and often exaggerated valour.

If all this be true, and what else but good could God have intended in giving to man such a boon, than to make it a blessing? Then, my friends, let us plant Vineyards as well as Noah. Let us avoid the excess he fell into. We have not the same excuse that he probably had; and it is very possible he may have been ignorant of the effect of drinking too much before he found it out to his cost and shame. But the cultivation of the Vine is an art which must be learned, before it can be followed with any degree of success. Attend then to the lessons I am preparing for your instruction in this most useful and pleasant business. Some of you will say, who are you that pretends to teach us! To this question, my answer is, that I am a man, I hope, full of good-will towards mankind in general, and particularly towards my fellow-citizens in this, my adopted country; that I was born in a country where the culture of the Vine is the principal object; and, that my greatest wish has always been to introduce it into the United States, and particularly into South-Carolina. To the attainment of this desired object, I have, for upwards of eighteen years, bent all my exertions. It has not been without very considerable expense, labour, time and perseverance, that I have finally, after many failures, succeeded in cultivating the Grape advantageously, and making good wine. The testimony of my friends, who are, perhaps, too partial, tends to encourage me in my long-continued exertions, and I am induced to impart, in this manner, what little knowledge I have acquired by extensive reading on this subject, by conversations with scientific men, but particularly by my experience.

If this be thought presumptuous in me, I beg leave to observe, that small as my acquirements are, they may be useful in this particular case, and I shall not be deterred by the acknowledged inferiority of my abilities, from attempting to do what I can. It must be remembered, that there is an old tradition, that the world is indebted for the advantage produced by the pruning of the Vine, *to an ass*, which accidentally got into a vineyard in the winter season, and cropped all the young branches he could get at to alleviate his hunger, until his master found him at this donbly useful work, and gave him a beating (the frequent reward of benefits rendered.) The Vigneron, however, found, the following season, that all the vines which had thns been cropped, and which he thought were ruined, produced a

greater abundance of better fruit than the remainder of his vineyard, which the ass had not been permitted to prune. He wisely took the hint, tried pruning, and derived great advantages from it. So mind not how humble the teacher is, but profit by his lessons, so that he teaches that which is good.

The reader need not look for fine writing in this Essay. Even if the author was capable of it, this is not a subject where it ought to be expected; added to this, that he is a Frenchman writing English. The whole of his endeavours will be to treat his matter in a clear, plain, and intelligible manner, and if he succeeds in doing this, he will have done, as regards style, all that can or ought to be expected of the writer of a practical treatise on an Agricultural subject.—On such a subject, simple and clear language is much more likely to be productive of good, than if it was couched in language not generally in use among Farmers. The man of learning and science can easily understand what is within the comprehension of the plain labourer, but the latter cannot so easily make out the meaning of learned and scientific language.

There is, however, one part of this subject which the writer will enter on with great diffidenee; and yet, here it is very probable he will be accused of very great presumption. It is, the instances wherein he may differ from authors who have treated on the same subject (which he does sometimes) and even from authors of first merit and celebrity. The only hope he has of any alleviation of any blame bestowed upon him, is, that on a subject of this nature, certain things may be true in France, that are untrue here. Most unwilling to give offence, or injure the feelings of any one in the smallest degree, where it can be avoided, the author will assert nothing positively, but what he knows to be positively true; and when circumstances may lead him into a belief of facts he cannot prove, or fully ascertain, he will say so. In short, he will faithfully and plainly state the result of his experience; and if he sometimes soars into the region of hypothesis, it will only be to endeavour, thereby, to find out the intention of nature, in the production of certain things; and how far a cultivator may be allowed to deviate from her evident objects; how her efforts may be aided by his skill; and lastly, where it is best to suffer her to perform her operations uninterrupted and unshackled. If, in doing this, his

opinions should be found different from those of men, far his superiors in knowledge, he must beg to be allowed to have his own free opinions, when they are grounded on what he considers correct data, acknowledging at the same time his liability to error, as a man. He will, with great pleasure, acknowledge the sources from which he may have drawn information, otherwise than by experience; and he intends to draw very freely on the best authors within his reach. Having stated what is the practice in wine-countries, as far as he is acquainted with it, it is his intention to give an account of his various trials, with the practice he has finally adopted, and his reasons for doing so. This arrangement, it is presumed, will be useful to future beginners, who may thereby avoid the necessity of making very numerous experiments—which, in a subject of this nature, requires each, several years before the success or failure can be ascertained. In order the better to elucidate the difficulties inherent to this subject, and to consider it the more fully, it may be proper to examine into the causes that have heretofore caused the failure, and consequent abandonment of the many attempts at the cultivation of the Vine in this country.

It is well known that many of the French emigrants to this country after the revocation of the edict of Nantz attempted it and failed. A Mr. Magget obtained a sum of money from our Legislature, some twenty-five years ago, for the promotion of this object. He failed. It is true, I am told, that his sole object was to obtain the money. A very respectable inhabitant of Columbia, Mr. Benj. Waring, deceased, some years since, tried it without success. Mr. Lequinio de Kerblay tried it in Edgefield, and failed; besides many others, who had no better success. A question naturally arises here, why have they all failed, and why I, together with several others in Georgia, in North-Carolina, and elsewhere, have a very great prospect of succeeding, amounting almost to a perfect certainty? May not this country be now better suited for it than formerly, and may not the experiments have been made on land of too fertile a quality? I think these are among the true causes of so many failures. Let us remember the observation of Virgil, and it has been sanctioned by the experience of two thousand years, viz.: "*Denique apertos—Bacchus amat colles.*" (The Vine delights in an airy, hilly country.) In conse-

quence of this, all writers recommend to avoid the vicinity of extensive forests, where the air does not circulate freely, and may come to the vines loaded with moisture, and probably other unfavourable matters. Although this country is still covered with forests, the extensive clearings that have taken place, must have produced a favourable change, which is continually progressing. Another cause, viz.: the too great richness of the soil formerly selected. Whether it is to be attributed to the freshness of the soil, or to the nature of our climate, or to both combined, it is very certain that foreigners would not, at first, make choice of such land as has been found to be most suitable here: for, although the Vine is cultivated in Europe, frequently, in soils of inferior fertility; it is seldom seen there in soils, apparently, so very poor, and still more seldom, without the application of heavy manuring; and, after all, their vines do not grow with a *vigour at all to be compared with that of ours.* This great vigour of our vines must have defeated all the efforts of Europeans in their attempts to train them as they had been accustomed to do it in their native country. To this join the discouragement caused by the rotting of the Grapes, and the facility offered of doing better by the cultivation of such articles as were cultivated all around them, viz.: Corn, Indigo, Rice and Cotton. These must appear as sufficient to deter men from persevering in their experiments, when, at the same time, they could not probably afford so great a sacrifice of time as these experiments require; many years being necessary to ascertain the effect of a change of system. Yet it is very strange that some of them did not persevere; for nature seems to have pointed out to them that they must finally meet with success. *The country is every where covered with native Grapes,* of very various and numerous kinds, intermingled with innumerable trees, shrubs, &c. &c. Wherever it has been attempted in similar latitudes, in other parts of the world, it has, I believe, invariably done well. It would then, be a most strange anomaly, that, with all the varieties of soil, climate, and native vines in our woods, the cultivation had not succeeded. These considerations induced me to persevere in my experiments, notwithstanding my repeated failures, and the advice and even sneers of my friends and others. I was so fortunately circumstanced as to be able, without risking my ruin, to go on and try every method I could think of, and after almost

unremitted exertions and considerable expense, I have so far succeeded, as to extend my Vineyard to about eight acres, with an intention to double it next winter.

If the above premises have been correctly stated, and I am not aware of having mis-stated any thing, it would appear that the following conclusions may be fairly drawn from them:—

That, although this culture may have formerly failed, it may now meet with success on account of the greater clearing of the country. That intelligent persons, accustomed to it, would only succeed in their attempts after repeated and numerous trials, unless they availed themselves of the experience of others *obtained in this country.* It is very probable, nay it is certain, that Vignerons from Europe would plant, and attempt to cultivate the Vine according to the only mode known to them, till after several years they would have found it absolutely impracticable. They then would try some other plan, which would also take several years to test, and which, in all probability, would not answer the purpose; and they must be very persevering indeed, if they would try two or three more methods, which may be necessary to be done, before they chance to hit upon a successful one. What a loss of labour and money! What a waste of precious *time!*

On the selection of the Site, and the quality of the Soil best suited for a Vineyard.

The first thing to be attended to is the selection of a proper place and soil for the establishment of the Vineyard. This is of the utmost importance; for, if you build your house on a sandy foundation, it will not stand; neither will a Vineyard prosper on a low, stiff, clay soil, or on a wet one; neither will it do well on a small spot of ground, surrounded on all sides, by thick, damp forests.

The situation best suited, is a high, airy, and dry spot of ground, having no extensive and thick woods overtopping it; for from these will issue foul air, cold damps, and, perhaps, other unascertained, injurious matters, all of which will tend to rot the Grapes, produce myriads of insects, which, by attacking not only the fruit, but the young shoots and the leaves of the Vine, prevent the full and saccharine maturity of the Grapes, without which good wine cannot be

made. The neighbourhood of extensive clearings, old fields, or such as are under cultivation, is, therefore, desirable.—Where, in fact, do we find the greatest quantities of the best native Grapes, but on the borders of old fields. It must not be understood, that I mean to say that the vines will not grow in those situations which I so particularly reject, for vines will grow almost in any soil and situation; but those growing in low, rich grounds, in a moist and pent-up air, although they may be very vigorous, will produce but little fruit, and that of an inferior quality. As this is of the utmost importance, I must be excused if I endeavour to impress it strongly on the reader's mind, by repeating, that the situation of a Vineyard, must be open, clear and airy. I believe the vicinity of water is no disadvantage to it, provided it be not stagnant. I have seen good Vineyards extend to within a few yards of large rivers, and even of the sea. It would appear by this, that moisture itself, if it be pure, is not detrimental, and it must be remembered, that the vicinity of large rivers and of the sea, is frequently visited by strong currents of wind which may probably carry off the superfluous moisture.

The nature of the soil is next to be attended to—sub-soil, as well as surface.

Examining the nature and habits of the plant to be cultivated, we find that it has very long and tender roots; that they extend far in search of nourishment; and, therefore, we must conclude, that a deep, loose, and permeable soil suits it best. Indeed, experiment shows that the Vine thrives best in a soil, light, sandy, or gravelly, and containing much vegetable mould, which is nothing else than vegetable matter in a state of decomposition, by which it is rendered fit for the food of other vegetables. We find, consequently, an astonishing vigour in the growth of the Vine cultivated in our sandy lands, compared with the vegetation of other objects of culture, such as Corn, Cotton, &c. because the roots, finding no obstacle in their way, they seek for food and moisture to a great depth. This is so true, that I have observed, that in our very hot and dry seasons, when all other cultivated plants are almost dried up, and no dew is to be found on any of them, a drop of it can be seen at every sharp point of the Vine leaves. All authors, I believe, agree in this, that the soils best calculated for a Vineyard, are the light, sandy or gravelly, or even stony; for

between the stones, the earth is loose, and the Vine sends its roots between them without difficulty. When the surface is of the above description to the depth of one foot, to three or four feet, the sub-soil may be slate, stone or clay, without any disadvantage. The best soils, are then the sandy, gravelly, stony, the decomposed leaves, the detritas of granite, of limestone, provided these are sound and dry. It is almost incredible with what luxuriance the Vine grows in our poorest sand-hills, in land that could not, without a great deal of manure, bring more than five or six bushels of corn per acre.

Much has been said and written as to the aspect most proper for a Vineyard. Some have recommended the east, some the south, and others even the north and west. Which of these is the best, is a question of no easy solution; and I have seen prosperous Vineyards in every aspect. This must depend on localities, and remote circumstances. The east is disadvantageous in countries liable to late spring frosts; for as such an aspect receives the first rays of the sun, when the vines are covered with hoar-frost, the effect is, almost invariably, that the young and tender shoots are killed by it; whereas, when the frost has thawed slowly and gradually, the injury caused by it is comparatively trifling. The south is certainly preferable, particularly where it is desirable to have much heat, on soils naturally cold, from causes which I am unable to describe. The west exposes the vines to violent winds, and to a most burning sun in the afternoon, which is sometime injurious, as we frequently find the trunks of fruit trees injured by it. Where very great heat is desired, a south-west aspect is more likely to give it than any other. The north is thought by many too cold, and it is undoubtedly so in many countries, yet in our Southern States, in a warm, sandy soil, we have no deficiency of heat, in any situation, and, I think, the north a favourable aspect in such latitudes and soils. I have often noticed that the north side of our sand-hills are generally more abundant in native Grape Vine than the others. The north side has this advantage, that vegetation begins there somewhat later, and, in consequence of this, the vines are in such situations less liable to suffer from late frosts. It is very remarkable, that some of the best Vineyards of Champagne, in latitude 49° to 50° north, have a northern exposure, notwithstanding their very high latitude. Such as are those of Epernay,

Vernesay, &c. Upon due consideration, I do not think the aspect is of very material importance, when other circumstances are favourable, particularly in warm countries. The judgment of the person who selects the place must be exercised according to his knowledge of the prevailing winds whether violent or otherwise. A good observation I have heard made, is, that a place very suitable for a Peach Orchard, is also very suitable for a Vineyard. Now it is well known that a Peach Orchard seldom fails bearing an abundance of fruit on a very elevated spot, without much regard to which of the cardinal points the ground inclines, or whether it inclines at all.

So much has been said about vines being planted on the sides of hills, and even of very steep ones, that many persons are under the impression that no other situation is at all proper. It is very true, that in Europe, such situations are generally covered with vines, and that some of them produce, perhaps, better wines, on account of the declivity of the ground where the Vine grows. Such places are frequently unfit for any other production, and where land is very dear, it is an object of the utmost importance to make use of such lands for so valuable a purpose, which, if not thus employed, would produce but little or no advantage to the owner or the country. Extensive Vineyards are seen, even in France, on level lands, and some of the best wines are sometimes produced from such situations. One consideration ought to have due influence in the Southern States, and in every country where most violent torrents of rain are apt to fall. As the soil must be well-worked, and kept loose and clear of grass and weeds, if a Vineyard is on a steep declivity, it is subject to considerable damage, by the soil and manures, when such are used, being frequently washed down to the bottom of the hill, and it is very expensive to replace them. The situation to be preferred, when choice is to be had, is a high, dry spot, the level top of a hill, with a loose, light soil, gravelly, sandy or calcareous, tolerably abundant in vegetable mould, with a sub-soil more retentive of water, (without keeping it stagnant,) at the depth of from eighteen inches, to three or four feet, either of clay, slate, rock, granite, or limestone. If there be a declivity of the soil, let it be very gentle for the reasons above enumerated. It must be confessed, however, that generally, hill-sides have a considerable advantage in furnishing the roots

of the Vine with a due, and more regular supply of the moisture necessary for its support; and it is frequently well worth the trouble to plough or hoe in such a manner as to prevent the washing down of the soil as much as possible.

(To be continued.)

ART. II.—*Brief Notes on the Agricultural Resources of South-Carolina.*

Sir,—Believing that your publication may become a most useful one in South-Carolina, provided every one contributes what they can, I hasten to send you my mite also.

The resources of this great State, although immense, are but little known, even to ourselves. Its Agricultural resources have never been developed. We fall, accidentally, on the cultivation of a single crop, and it proves a mine of wealth. We become negligent, others sometimes step in, and while we sow, they reap! They take the grain, and leave us the husk!! We have hitherto been too rich, too prosperous, and have not only neglected our resources, but have too frequently lavished and wasted our present means.

One error we are in at present, appears to be a too general cultivation of Cotton. I believe that the consumption follows close upon, and even *keeps pace with all that is produced when the price is low*, for low prices increase the consumption immensely, of all articles of common necessity, beyond all calculation! But we cannot look for higher prices while the produce is *ahead*, however little, of the demand. Those, therefore, who abandon the culture of Cotton, if they benefit themselves, will also benefit those who continue it, for reasons too obvious to require enumeration.

A CITY RUSTIC.

The Tea Tree.

In Barrow's Travels in Southern Africa (page 18) is the following observation:—

"The Tea plant has been long in the country, but totally neglected. It is a hardy shrub, which, when once

planted, is not easily eradicated; and the soil, the climate, and general face of the country bear a strong analogy to those provinces of China, to which it is indigenous."

The Cape of Good Hope, of which he speaks, is in a latitude *south*, similar to what South-Carolina is *north*.

On inquiry, I find that the Tea-Tree grows perfectly well in the open air near Charleston, where it has been raised for the last fifteen years, at Mons. Noisette's Nursery.

Tea, as exported from China, would cost too much in the preparation, for each leaf goes through a particular process there. But as this is probably done with a view of economizing room, and preserving its freshness in the long sea voyage to which it is exposed; we might, in raising it as a crop, use it and export it, at least northwardly, dried in the same manner as Senna or Hops.

Besides, as we know that the smell and flavour of Tea are not natural to the plant, but given to it artificially, for the purposes of commerce, we might *in Charleston* and *its neighbourhood*, raise a sufficiency of the *Olea fragrans*, and one of the *Camellias*, (which Kœmpfer asserts is used in Japan to give the Tea a high flavour,) to form a very profitable kind of culture. The Philadelphia, Boston, and Salem Tea-merchants would willingly purchase all that could be raised of these flowers, to new flavour their stale Teas, which would benefit their sale in Europe as well as in the United States. The importation of Tea into the United States, is from eight to ten millions of pounds weight annually. *It might become a great staple of South-Carolina.*

The Soft-Shelled Almond.

The Soft-Shelled Almond is the production of a tree in very respect similar to the Peach tree, and as easy of culivation. But it is more hardy, and its fruit remains on the tree without injury until it is gathered.

In those parts of the State where the Peach is raised in large quantities, if the Almond could be substituted, the profits would be great; for it is not only easier to collect, from its being less perishable while on the tree, but becomes an article of commerce very saleable. A great trade is carried on in it, as may be seen by the New-York papers, where Almonds are advertised by the hundred bales.

The Soft-Shelled Almond is worth, by wholesale, in New-York, ten to thirteen cents per pound—considerably more in Charleston.

It can be raised at once from the nut itself, and may be budded on the common Plum with advantage; and although not likely to become a great staple would be a *helping* crop.

The Caper.

The common Caper is the bud of a little branchy, thorny shrub, which creeps on the ground and spreads itself around, having thorns as the bramble, but resembling a fish-hook. Its leaves are like those of the Quince, its fruit of the size of a small Olive when it opens. It produces a whitish flower of four leaves. These leaves on dropping, leave a little knob like an acorn, in which are small red seeds like that of the pomegranate. It puts out many woody roots.

The Caper grows without cultivation, in warm climates, among ruins, on stone walls, or in dry, stony, *sandy*, and well exposed places. It is only necessary to sow the seeds in Spring or Autumn, when it comes without trouble; but it must be surrounded with good ditches, and planted away from other plants and grain, which require to be preserved from it, for its roots spread and propagate themselves exceedingly, and are of so harsh a nature, as to destroy any neighbouring plants.

The plants of the Caper may be raised from suckers, set ten feet apart. Near Marseilles and Toulon they require shelter from cold winds. In Spring, only one dressing is necessary. They suffer little from drought or heat. In Autumn they are cut down within six inches of the ground, and covered with earth, which is raised above them on all sides.

The twigs and young buds of the Caper are both preserved, to be used with Salad, and as seasoning. For the Caper of commerce, the buds are carefully gathered *every morning*, by women and children; for, as they increase in size they diminish in value. They are dried in the shade, after which they are thrown into vinegar, which is afterwards changed twice, that they may be more impregnated with it. In putting them in vinegar the third time, salt is

added to preserve them and soften the acidity. The green fruit, when it has attained the size of an Olive, makes a grateful pickle.

The roots of the Caper last twenty or thirty years. The preserved Caper is a valuable article of commerce, extremely saleable, and is exported in casks; but it can only be a *helping* crop.

The Currant, (a Grape Vine.)

Originally grew on many of the islands of the Archipelago, and in the Morea; but is now principally confined to the islands of Zante, Cephalonia and Ithica, hence called the Currant Islands.

It prefers the vicinity of the sea, and *flat lands to a mountainous country*; a loose, light, friable and flinty soil. The process of planting is the same as that of the Vine. The cuttings are planted six feet apart, four in a hole. They are tended in a similar manner to the Grape, but when the fruit is gathered, it is dried upon a prepared sloping floor. It takes eight days to dry them—when dry the stones are separated by small rakes.

The Morea used to export ten millions of pounds weight. In New-York, Currants sell at eleven to twelve cents per pound. The importation into the United States is about one hundred and fifty thousand pounds, annually. This might certainly become a great staple, and would require less trouble than either Rice or Cotton. The European market would take millions of pounds.

ART. III.—*On the Cultivation of Reclaimed Salt Marshes.*

"Beaufort, Sept. 18, 1827.

Sir,—I send you a few observations on the cultivation of Sea-Island or Black Seed Cotton, on reclaimed Salt Marsh. Should the experiments I have made, prove in any manner serviceable to the Agricultural interest of our country, I shall be gratified; and have hastily thrown together a few remarks, from which you may, perhaps, be able to glean something.

The lands I have in the culture of Cotton, are situated at the heads of salt-water creeks, and commonly called coves or hard marshes. They produce several kinds of salt-weed; such as rushes, wire-grass, samphire or marsh-mallows, and common marsh. In some places too soft to bear the weight of cattle; but generally fed upon by them. The lower parts covered by common tides, the upper, by spring tides, and when strong eastwardly winds prevail. The soil for six inches deep, principally consists of the fibrous roots of these grasses; but below this, black mud, blue, and sometimes yellow clay is found. The labour of banking in these lands must depend much upon their situation; but the labour of bedding up, for planting, is very great. The ablest hands completing but four or five rows of 105 feet per day. They can scarce be ditched too much, as the land should be kept very dry, and as the mud and clay thrown out from the ditches, tend exceedingly to the quick growth and maturity of the Cotton. I plant in holes, on the beds, about three feet apart, putting into each hole, at the time of planting, a large double handful of high-ground earth. This, I have carried in baskets, and find extremely slow, laborious work.

The second year, I planted in the same holes, merely pulling up the old stalks. As soon as the Cotton was well up and thriving, the beds were lightly hoed down into the alleys, where a list was formed and left for ten days. This list was then hauled back upon the beds, and they received two more common haulings or hoeings up, by the middle of July, when the crop was laid by. At the last thinning, in June, two stalks were left in each hole. The labour of culture is not great the second year, if the beds are not changed, and you plant in the same holes. And some Planters among us state this method, according to their experience, to be the best.

In 1825, (my first trial,) I planted four and a half acres, in the first week in April. The season, this Spring, being very wet, the Cotton sprouted in a few days, and throve luxuriantly, until the caterpillar attacked it, about the middle of September. To these four and a half acres, however, I made nine hundred pounds of clean white Cotton, and sold it at fifty-six cents per lb. when my other Cotton brought only twenty-four cents per lb.

In 1826, I planted about twenty-five and a half acres more; but the uprecedented drought of that Spring, prevented the Cotton from coming up, until the latter part of June; except in a few moist spots. The seed germinated, but could not force itself through the earth, for want of moisture; and the consequence was, that to thirty acres, I only made fifteen hundred pounds of clean white Cotton. This sold for only thirty cents; the rest of my crop for twenty and a half cents.

This year, 1827, I have planted these same thirty acres. This Spring being the finest I have seen for years, the Cotton came up immediately and throve vigorously, until the middle of June; when the salt water breaking over my banks, covered the tops of the beds and injured the Cotton considerably, by making it cast off a quantity of leaves, forms, blossoms and pods. In August, very heavy rains, in quick succession, overflowed my beds again, and caused a shedding as before. And now I have barely got the fields well-drained of another flood, by rain, on the 7th and 8th of this month.

These three inundations have injured the Cotton considerably; but as it has commenced opening tolerably, I may reach three thousand pounds, if we have not any severe frosts before the first week in November. If I make this, I shall esteem myself fortunate, after my mishaps, and after this trying season. I am now busy in banking-in more of this land, and hope, my expectations, that it will prove an advantageous range of culture, may not be disappointed. The pods are certainly more numerous and larger, adhere more tenaciously to the stalks in trying seasons, and mature sooner.

Although little may be made some years, from the destruction by hurricane or caterpillar, yet, the higher price it bears on account of its superior quality, may occasion no loss. And I am clearly of opinion, the product by quantity can be very great, (quality and high price still making it greater,) as the power, of guarding against inundations of either salt or fresh water, is in our own hands, by increasing the banks and drains.

But I hope I may not mislead others. There is something yet to be correctly ascertained, about this wild experiment as I have heard it frequently called. I know Planters

who have tried it some years, who are now against it. They state these lands, by repeated culture, to be disposed to take what we denominate, the blue rust; that is, overgrown stalks, falling to the ground with large leaves, of a dark, bluish green, sometimes grey colour, and a few or no pods.

Indeed, the first year of my culture, it appeared in spots, and I found neither lime, salt-water, nor making large fires on these places, with old rails, underwood, stubble, &c. had any good effect. Land exhibiting any signs of iron-ore, is sure to be affected. And we can only observe with any certainty, yet, that there is less of it, in dry years, than wet. Draining will perhaps, therefore, be the best remedy. To sprout the seed, in a dry Spring, is also another great difficulty. How to obviate this we know not.

Thus, Sir, I have endeavoured to give you a few hints relative to this species of culture. I am, yet, only three years old in experience, and shall be always willing, I hope, to answer any questions you may please to ask; and to give any information I may be able to obtain, relative to the work in your hands; but request you to consider I give nothing by way of disputation. Other lands, other seasons, and other experiments may give other results. If, I think them better than my own, I shall be happy to follow them; for I am much inclined to believe, I should be more sorry to mislead myself than others; therefore I am perfectly willing to be instructed. Yours, very respectfully,

X. Y.

[NOTE. The subject, of cultivating Salt Marsh Lands, is one of importance, when we consider the immense number of acres which border on our sea-coast, and we hope that this communication will tend to draw the attention of our Planters more to these lands, which may, hereafter, become a most valuable portion of our territory, and capable of being employed for the cultivation of various other plants as well as Cotton. The manuring of our lands with salt marsh-mud, has improved the staple of our Sea-Island Cottons very much; the product has also been increased. If these advantages have been gained by the mere application of mud to our high-lands, is it not very probable that the cultivation of these Marshes, will prove highly profitable, when properly reclaimed. That the staple of the Sea-Island Cotton will be much improved, there can be no doubt. This has been

established already by actual experiments, and so great has been the difference, that we are informed in this communication, that there was, in one instance, a difference of 32 cents per lb. between the Cotton raised on the marsh land, and that raised on the same plantation on the high land, in favour of the marsh land. This is certainly very encouraging to such as have these marshes situated conveniently, and wish to engage in the cultivation of them, and not to let so much land, which may, hereafter, become the most valuable part of their plantations, remain unimproved. There appears to be some difficulty in the way, and some obstacles to overcome, but we hope that they are not insurmountable, and that the intelligence and skill of our Planters will soon remove them. Those mentioned by our correspondent are —the blue rust, and a difficulty of sprouting the seeds in dry Springs. The first, perhaps, may be obviated by the application of *very large quantities of lime*, which will destroy the pernicious quality of the iron-ore, (should this be the cause,) and convert it into manure.* Our correspondent does not mention the quantity he used, which we are sorry for. The failure may have been owing to the quantity used being too small, and a larger quantity may, perhaps, remove the difficulty. Perhaps the application of lime to the whole surface, when first brought into cultivation, may prove highly serviceable, especially, as there appears to be a superabundance of vegetable matter. The expenses on our sea coast would be trifling, as there is an abundance of oyster-shells scattered along our creeks and sounds, and plenty of wood to convert them into lime. The experiment is well worth making. As to sprouting the seed in dry Springs, there is considerable difficulty even on high lands. We are rather inclined to think, that when these lands are brought into fine tilth by cultivation, that there will not be more difficulty with these than with other lands of the same tenacity. We hope that our Planters will not let the subject rest here, but examine and test it fully.—*Editor.*]

* See Sir Humphry Davy's Agricultural Chemistry, p. 128. Am. Ed.

PART II.

REVIEW.

ART. I.—*A Report accompanied with sundry Letters, on the causes which contribute to the production of fine Sea-Island Cotton; read before the Agricultural Society of St. John's, Colleton, on the 14th March*, 1827. By WHITEMARSH B. SEABROOK, Corresponding Secretary. Published by order of the Society. Charleston. Miller. 8vo. pp. 36. 1827.

The culture of the Cotton-plant, in this Southern section of the United States, has, from its unexampled increase, and the vast amount of present production, assumed a high rank among subjects of commercial and political importance. When it is recollected, how few years have passed, since it first began to be viewed as a staple commodity of the country, and since the quantity produced was inconsiderable; it is not difficult to perceive, that singular changes must have been effected in the commerce, manufactures, and clothing of most civilized nations, by an annual supply of this article, computed by hundreds of thousands of bales.

Whatever difference of opinion may exist, as to the general utility and importance of this department of Agriculture; there can be none, in reference to the deep interest, which those actually engaged in it; and whose support and prosperity depend upon its success, must necessarily feel, in its present condition and future prospects. For nearly thirty years after Cotton was cultivated pretty extensively, the demand was so great, and increased so rapidly, that the attention of its growers was almost exclusively directed to such an augmentation of the quantity as should keep the market supplied. And during that period, their labours were well rewarded by a ready sale and generous prices. But within the last ten years, an important change has taken place. The culture has been so widely extended, and the supply has become so abundant, that though the manufacture of cotton goods has, perhaps, continued to increase, yet the price of the raw material has undergone an unexampled de-

pression. It has, therefore, become necessary for planters to pay an increased regard to the kind and quality of the Cotton they cultivate.

Undoubtedly, it has been a very material defect in this culture, that it has been, too generally, considered a matter of mere mechanical labour; and but little effort has been made to investigate the peculiar properties and habits of the plant, and to apply the principles of science to its improvement. It has, indeed, been a great public calamity to the State at large, that the more intellectual portion of the community have so little regarded the interests of Agriculture. Men of enlarged and cultivated minds have devoted their time and talents to the preservation of the rights of property, the security of our civil institutions, and the promotion of the arts and ornaments of life; but have seemed to take it for granted, that the science, which forms the foundation of our private wealth and public prosperity, could be safely entrusted to illiterate managers, whose only guide is prevalent custom, or a very limited experience. They did not appear to remember, that the noblest province of philosophy is to disclose the treasures of the earth by teaching the mysterious adaptation of certain soils and manures to perfect her productions; and, that some of the most valuable benefits, which genius and learning can bestow upon a community, consist in useful discoveries and instructions as to husbandry.

Such a negligence of the scientific principles of Cotton-planting was easily tolerated, when the universal object was to augment, as much as possible, the amount produced. But a very different state of things has succeeded. Every thing now depends upon the excellence of the article, and the skill employed in its preparation. Under these circumstances, it is indispensable to the welfare of all interested in this important staple, that the principles of its culture should be thoroughly investigated. To accomplish this, it is necessary that men of leisure and intelligence should devote their attention to accurate observations and well-conducted experiments.

It has been very gratifying to witness the increasing interest, which, for some time past, this subject has excited in the public mind. But a vastly more general and energetic movement in this cause must take place before the wealthy and educated classes of the community will have performed

their duty, and before all the advantages within the reach of our citizens will be enjoyed.

Under such impressions, we regarded the appearance of the pamphlet before us, as a very auspicious event, in our Agricultural history. We hailed it as the commencement of a new era—the earnest of an expected harvest of practical information. Frequent perusal has confirmed our first decision, that it is a valuable performance; worthy of the Society and the vicinity in which it originated. From such a quarter our expectations were high—and we have not been disappointed. It is such a production as we should have expected from the garden of Carolina, and from planters pre-eminent for knowledge, skill and success. The author merits the special gratitude of the public, for the clearness and ability with which the subject is developed, for the employment of his talents in the cause of general utility, and for the elegant and classical style in which his sentiments are communicated.

We shall enrich our pages, in the present number, and some future ones, with copious extracts from this interesting performance; for which we shall, doubtless, receive the thanks of our readers.

In the commencement of his able Report, Mr. Seabrook makes the following forcible observations:—

"There is, perhaps, no inquiry more interesting and important to the Southern agriculturist than the unexampled disparity of price which exists in relation to Cotton—the main staple of this State, and one great source of its wealth and prosperity. On investigation, the causes may appear striking and obvious; although, seemingly, they rest on an imaginary basis. While a few planters are rapidly attaining the goal of their desires from highly lucrative prices, the great body of the profession can seldom realize but a slender pittance for their annual labour. The estimated value of *brands* is as variant as the persons whom they designate; oftentimes differing from 5 to 150 per cent. Is this value real, or is it fictitious? Would a merchant purchase a commodity at a *secret** price except he anticipated a positive gain? Or, would he seek to invest his capital in Cotton at 70 or 80 cents, when the market invited him to disburse at the one-third of that rate, unless from motives fundamentally sound? Can two neighbours, with similar culture, similar seasons, and with land equally desirable in reference to location and fertility, raise crops wholly dissimilar in their relative worth? Deeply impressed with the mag-

* Synonimous with high or exorbitant.

nitude of the subject, the Secretary addressed a circular to five, he believes, the most successful growers of *fine* black-seed Cotton in this State. Their replies to his queries, he now proposes to examine analytically." pp. 3, 4.

The subject matter of this Report, as explained in the above extract, is deeply interesting to the State at large, and especially the planters of black-seed Cotton. The very uncommon fact, that some plantations produce crops, worth in market, four times as much per pound, as those of other lands in the vicinity, apparently possessing equal advantages, and cultivated in a manner nearly similar, opens a field of inquiry and experiment, of a very inviting and attractive character. It evinces, beyond all controversy, that the philosophy of this department of Agriculture is understood by very few, and that it contains secrets well-deserving patient and accurate investigation.

This vast discrepancy in price, seems also to disclose the only flattering prospect of the return of former prosperity, to the Sea island planters. The day has gone by, when the simple circumstance, of producing long-staple Cotton, insured affluence to a district of country. The region, so characterized, is too widely extended to admit of such an expectation. But if the lands of our seacoast are peculiarly adapted to the production of a description of Cotton, of surpassing fineness, and so scarce as always to insure a liberal price, we see nothing to hinder their possessors from enjoying a permanent and decided superiority. If it be true, that the finest quality is obtained from no other part of the world; and, that so much of it is actually produced by some of our fellow-citizens, as to secure to them such ample remuneration, it seems unquestionable, that all persons having lands nearly similar, may avail themselves of the same advantages. All information upon this subject is exceedingly desirable, and the thanks of the community are due to Mr. Seabrook, and his associates, for their patriotic and generous efforts to promote the public welfare. The course adopted of soliciting statements directly from the most successful planters, was eminently judicious. And the information, thus elicited, is well calculated to call into action, all the science, industry, and energy of the community; for, although these gentlemen may occupy situations uncommonly favorable, yet their statements contain abundant evidence, that their pre-eminent success is, principally,

owing to skilful management, well-directed experiments, and accurate observation. The following extract contains sufficient evidence, that this view of the matter is correct:

"The Cotton of Mr. Burden, and his favoured associates, is indebted for its celebrity to the combined requisites of fineness, strength and evenness of fibre. Upon what principles are these distinguished properties dependent? Those planters use, not only extensively, but almost exclusively, salt mud. This manure is known to impart a healthful action to the Cotton plant, to maturate rapidly its fruit, and to produce a staple at once strong and silky.

"One of the plantations* of Mr. Mathewes consists, it may be said, principally of reclaimed marsh land. It is here, that his finest and most valuable Cotton is produced. At Edisto Island, from his judicious system of mudding, his land has recently undergone a radical change. Under its former proprietor it was an unproductive estate. Through the perseverance and scientific management of Mr. Mathewes, luxuriance of herbage *now* exists, where every indication of sterility *once* predominated. Mr. William Seabrook, sen. from a steadfast adherence to the application of salt mud, has literally converted a pine barren to as fruitful a soil as Edisto Island can boast. These two facts, in conjunction with many others, within the personal knowledge of the Secretary, are, to his judgment, conclusive on the point of the beneficial influence of salt mud on the Cotton crop." pp. 4, 5.

We may, therefore, fairly conclude, that in this pursuit, as in most others, success is commensurate with the skill and exertion employed; and, that in proportion as the nature and properties of the plant have been carefully studied, the requisites to its highest perfection clearly ascertained, and the labour of applying valuable discoveries patiently endured, the desired object has been attained.

Whatever stress may be laid upon the circumstance that some of the lands in question consist of reclaimed marsh, which may be supposed capable of a peculiarly valuable production; it cannot surely be contended, that the worn-out fields and pine barren, which are expressly mentioned, possessed any intrinsic superiority. And yet such lands have been so managed, as to produce this golden harvest. These facts are, alone, sufficient to establish certain, plain principles, which ought to be generally understood and practised. It is evident that the former routine of Cotton-planting, which has so long been sanctioned by general

* Bear Island, St. Bartholomew's Parish.

usage, must be abandoned, as unsuited to present circumstances—that the ordinary process, used to produce a luxuriant vegetation, must give place to a system of manuring, conducted upon scientific principles, and adapted to the varieties of soil and situation—and, that the business of selecting seed, preparing lands, and directing the application of proper manures, is no longer to be trusted to the uninformed and unreflecting: but forms an important science of itself, which requires the attention of the most intellectual and enlightened of the community.

Few subjects, connected with natural science, present greater attractions to the philosophical observer, than this *vegetable wool*, which adorns our fields and enriches our country. If there were no profit, there would still be pleasure in marking its gradual transformation, from an elegant flower, blooming for a day, into a beautiful material, forming the clothing of half the human race. That, which half a century ago was disregarded by our fathers as a useless weed, or as the perquisite of the poor, is now the treasure of the affluent and the reward of the industrious. Surely, a plant which pours its annual millions into our coffers, is deserving of a more minute attention, a more enlightened care, a more appropriate sustenance, than it has ever yet received. In experimenting upon its properties, in ascertaining its favourite pabulum, and in exploring the secret sources whence it derives its fineness and strength of fibre, its gloss and silky softness, the men of taste and science may find a delightful employment, while they are essentially promoting the interest of themselves and others. There should be no privileged orders in this concern. An accurate and practical knowledge upon this subject ought not to be a rare attainment, rendering its possessor a prodigy. It is a field of inquiry open to all, and all should explore it. The time, we trust, is not distant, when every intelligent Cotton-planter shall be familiar with those facts and principles, which now seem to be understood but by a few individuals, who derive from their knowledge, extraordinary advantages. Those fortunate individuals are to be esteemed public benefactors.—Their example is most valuable. What they *have* done, others *can* do by an equal degree of skill and persevering diligence. It is high time that there should be a general and convincing refutation of the absurd opinion, that the

production of the finest Cotton, is limited, in Carolina, to half-a-score of plantations.

To show the importance of personal care in selecting seed, and of accurate knowledge to direct the choice, we copy the following interesting paragraph:

"It will be readily conceded, that, in every crop, the selection of the best seed is of primary consideration. The judicious horticulturist reserves the largest and the most perfect plants with a view to reproduction. He pursues a principle which nature inculcates, and daily experience confirms. To diligent and skilful cultivation, with a proper choice of seed, he confidently relies for a reward for his labour. A neglect of the one, would as infallibly mar his anticipations, as a neglect of the other. In despite of these truths, of obvious notoriety, the Southern planter may be said never to have reflected on a subject so deeply interwoven with his profession. Mr. Burden selects his seed from the *most perfect, early stalks, produced on the best land.* To an inflexible adherence to this system, it is supposed, that his pre-eminence in market, is, in a great measure, to be attributed. The varieties of Cotton-seed are numerous, differing, not merely in their configuration, but in their generative power, and in their capacity to yield a fine or a long, a strong or a weak fibre. It is not to be inferred, that the seed which is reputed to be the best will invariably produce fruit with precisely similar seed. Many causes may conspire to effect its deterioration. Hence, the necessity of annually careful examination. In elucidation of the eminent advantages resulting from a due regard to this branch of husbandry, the Secretary would invite the attention of the Society to the following facts. Mr. Benjamin Freeman, of John's Island, three years ago, accidentally met with a stalk of Cotton in the field of ————, which, from its uncommon prolificness, attracted his attention. He soon discovered that it had deviated from the usual habits of the plant, and had borne pods, not only longitudinally, and at short distances, but transversely on nearly every arm. From this stalk he gathered seed for seven task-beds.* The last season he planted five acres on *unmanured* land. The product was 270 lbs. per acre. The residue of his crop, assisted with composts, and other excitements, yielded but 150 lbs. to the acre. Mr. William Seabrook, jun. of Edisto Island, from a few seed procured from Mr. Freeman, planted one bed in his garden: this bed was manured with salt mud. The result was the unparalleled rateable return of 800 lbs. of clean ginned-Cotton per acre. Mr. John R. Mathewes also reared a few plants from Mr. Freeman's seed. The quantity of fruit gathered by him equalled the ratio of Mr. Seabrook's experiment. The Secretary would

* In the language of the planter 105 feet square is a task. There are 21 beds or rows in every task.

here incidentally remark, that the mutation of Cotton seed from high, sandy lands to low, clayey soils, experience has satisfied him, is eminently beneficial As every vegetable takes a part of its character from the earth in which it grows, its organic principle must be effected by the same cause. A due admixture of the primitive earth is essential to successful husbandry. Where nature has not performed this service, it is incumbent on man to accomplish it by means positive or indirect. To transfer seed from one congenial soil, in which it has been wont to procreate, to another equally congenial, although of a diverse texture, is like a change of air and food to an animal. It acts as a salutary condiment to the appetite, and infuses vigour and activity into the whole system." pp. 8—10.

But while so much evidently depends upon choice of seed and judicious management, it is not to be denied that lands, as closely allied to salt marsh as is consistent with fertility, possess a superior adaptation to this culture; and, therefore, that those possessing them have a very decided advantage. But may not this physical advantage be counterbalanced? Are there not facts to prove, that soils, originally sterile and unsuited to the Cotton plant, have been so improved and changed in character, as to produce the finest staple abundantly? Allowing, that in some favoured spots, the finest Cotton is produced almost spontaneously, needing little else from man than protection and tillage, this should stimulate those, less fortunately situated, to supply to their lands, by artificial means, those peculiar fructifying qualities which are bestowed on those of their neighbours by bounteous nature.

(To be continued.)

SELECTIONS.

Art. I.—*Gardening as Practised in Britain.*

The art of gardening in the earlier ages of society would be practised without those local subdivisions, or technical distinctions, which its progressive improvement has since

rendered necessasy; and being then carried on in one enclosure, called a Garden, the term Gardening was then sufficiently explicit for every purpose. But at present the local subdivisions and technical distinctions of this art are various; we have the kitchen, fruit, flower, forcing, and exotic gardens, the pleasure-ground, shrubbery park, and timber-plantation, all within the province of Gardening; and the terms culinary gardening, fruit-gardening, flower-gardening, planting, &c. as technical distinctions for them. The vague manner in which so many terms have been used by gardeners and authors, has led to some confusion of ideas on the subject, which it is much to be wished, could be avoided in future. Taking the word gardening as a generic term, we have arranged its ramifications or divisions, in what we conceive to be permanent or specific distinctions. The principles of classification which we have adopted, is that of the use or object in view; and applying it, we think all the varieties of gardening may be included under the four following species:—

Horticulture, the object of which is to cultivate products used in domestic economy. It includes culinary and fruit gardening, or orcharding; and forcing or exotic gardening, as far as respects useful products.

Floriculture, or ornamental gardening, the object of which is to cultivate plants ornamental in domestic economy. It includes flower, botanic, and shrubbery gardening; and forcing and exotic gardening, as far as respects plants of ornament.

Arboriculture, or planting, the object of which is to cultivate trees and shrubs, useful in general economy. It is practised in forests, woods, groves, copses, stripes, and rows.

Landscape-gardening, the object of which is to produce landscapes; or, so to arrange and harmonise the external scenes of a country-residence, as to render them ornamental, both as domestic scenery, and as a part of the general scenery of the country. This branch is by some called picturesque, rural, ornamental, or territorial improvement; rural ornament, ornamental gardening, pictorial improvement, new ground work, ornamental planting, &c. It includes the ancient, formal, geometric, or French gardening, and the modern, natural, picturesque, or English gardening.

There are other terms applied to gardens and gardening; as nursery, market, physic, &c. gardens, and nursery-gardening, market-gardening, &c.; but these concern gardening as a *trade*, rather than as an *art*, and their discussion is referred to the succeeding part of this work, in which gardening is considered statistically.

* * * * * * * *

The Formation of a Kitchen-Garden.

The arrangement and laying out of a kitchen-garden, embraces a variety of considerations, some relative to local circumstances, as situation, exposure, soil, &c.; others depending on the skill of the artist, as form, laying out the area, water, &c.: both require the utmost deliberation; for, next to a badly designed, ill placed house, a misplaced, ill arranged, and unproductive kitchen-garden is the greatest evil of a country-residence.

Situation.

The situation of a kitchen-garden, considered artificially or relatively to the other parts of a residence, should be as near the mansion and the stable-offices, as is consistent with beauty, convenience, and other arrangements. Nicol observes, "In a great place, the kitchen-garden should be so situated as to be convenient, and at the same time be concealed from the house. It is often connected with the shrubbery or pleasure-garden, and also placed near the house. There can be no impropriety in this, provided it be kept in good order, and the walls be screened by shrubbery from the immediate view of the public rooms; indeed it has been found, that there is both comfort and economy in having the various gardens of a place connected and placed at no great distance from the house. In stepping from the shrubbery to the flower-garden, thence to the orchard, and lastly to the culinary garden, there is a gradation both natural and pleasant. With such an arrangement, in cases where the aspect of the ground is answerable, and the surface, perhaps, is considerably varied, few faults will be found."

Sometimes we find the kitchen-garden placed immediately in front of the house, which Nicol "considers the most awkward situation of any, especially if placed near, and so that it cannot be properly screened by some sort of planta-

tion. Generally speaking, it should be placed in the rear or flank of the house, by which means the lawn may not be broken and rendered unshapely where it is required to be most complete. The necessary traffic with this garden, if placed in front, is always offensive. Descending to the consideration of more humble gardens, circumstances are often so arbitrary with respect to their situations, as that they cannot be placed either so as to please, or give satisfaction by their products. There are cases where the kitchen-garden is necessarily thurst into a corner, and perhaps is shaded by buildings, or by tall trees, from the sun and air; where they are placed on steep hangs in a northern aspect, the sub-soil is a till or a cankering gravel, and the site cold and bleak. Such situations as these are to be avoided, and should be considered among the worst possible. Next are open, and unsheltered plains. But even there, if the soil be tolerably good, and the sub-soil be not particularly bad, shelter may be reared, so as that in a few years the garden may produce a return for the expense laid out in its improvements."

To place the fruit and kitchen-gardens at perhaps half a mile's distance or more from the house, was formerly the prevailing taste. In many cases, Neill observes, " this has been found inconvenient, and it can seldom happen that the garden-walls may not be effectually concealed by means of shrubs and low growing trees, so as not to be seen, at least from the windows of the public rooms, and the garden yet be situated much nearer to the house. It is scarcely necessary," he adds, "to observe, that an access for carts and wheelbarrows without touching the principal approach, is indispensable."

With respect to the natural situation of a garden, Nicol and Forsyth agree in preferring a gentle declivity towards the south, a little inclining to the east, to receive the benefit of the morning sun. "If it be situated in a bottom, the wind will have the less effect upon it; but then damps and fogs will be very prejudicial to the fruit and other crops; and if situated too high, although it will in a great measure be free from damps and fogs, it will be exposed to the fury of the winds, to the great hurt of the trees, by breaking their branches, and blowing down their blossoms and fruit.

The situation should not be so elevated as to be exposed to boisterous and cutting winds; nor should a very low

situation be chosen if circumstances afford any choice. It should be situate conveniently for access from the house.

Avoid low situations and bottoms of valleys, says Switzer, Darwin, Bradley and Lawrence, "because there is often a sourness in the earth that cannot be eradicated, and in this uncertain climate of ours, such heavy fogs and mists that hang so long on the fruit and leaves in low situations, that not only vegetation is retarded, but also the fruit." "The greater warmth of low situations," Dr. Darwin observes, "and their being generally better sheltered from the cold northeast winds and boisterous southwest winds, are agreeable circumstances; as the northeast winds in this climate are the freezing winds; and the southwest winds being more violent, are liable much to injure standard fruit-trees in summer, by dashing their branches against each other, and thence bruizing or beating off the fruit; but in low situations, the fogs in vernal evenings, by moistening the young shoots of trees, and their early flowers, render them much more liable to the injury of the frosty nights, which succeed them which they escape in higher situations." Professor Bradley "gives a decisive fact in regard to this subject. A friend of his had two gardens, one not many feet below the other, but so different, that the low garden often appeared flooded with the evening mists, when none appeared in the upper one; and in a letter to Bradley he complains that his lower garden is much injured by vernal frost, and not his upper one. A similar fact is mentioned by Lawrence, who observes, that he has often seen the leaves and tender shoots of tall ash-trees in blasting mists, to be frozen, and as it were, singed, in all the lower parts and middle of the tree; while the upper part, which was above the mist, has been uninjured."

Main entrance to the Garden. Whatever be the situation of a kitchen-garden, whether in reference to the mansion or the variations of the surface, it is an important object to have the main entrance on the south side, and next to that on the east or west. The object of this is to produce a favourable first impression on the spectator, by his viewing the highest and best wall (that on the north side) in front; and which is of still greater consequence, all the hot-houses, pit, and frames in that direction. Nothing can be more unsightly, than the view of the high north wall of a garden, with its back sheds and chimney-pots from behind; or even

getting the first *coup d'œil* of the hot-houses from a point nearly in parallell line with their front. The effect of many excellent gardens is lost or marred for want of attention to this point, or from a peculiarity of situation. Even the new garden of the London Horticultural Society, when finished according to their engraved plan, will be obnoxious to it; the Chelsea garden is liable to the objection, and those of Oxford and Liverpool particularly so.

Bird's-eye view of the Garden. When the grounds of a residence are much varied, the general view of the kitchen-garden will unavoidably be looked down on or up to from some of the walks or drives, or from open glades in the lawn or park. Some arrangement will therefore be requisite to place the garden, or so dispose of plantations that only favourable views can be obtained of its area. To get a bird's-eye view of it from the north, or from a point in a line with the north wall, will have as bad an effect as the view of its north elevation, in which all its "baser parts" are rendered conspicuous.

Exposure and Aspect.

Exposure is the next consideration, and in cold and variable climates, is of so much consequence for the maturation of fruits, that the site of the garden must be guided by it, more than by locality to the mansion.

The exposure should be towards the south, according to Nicol, and the aspect at some point between southeast and southwest, the ground sloping to these points in an easy manner. If quite flat it seldom can be laid sufficiently dry; and if very steep, it is worked under many disadvantages. It may have a fall, however, of a foot in twenty, without being very inconvenient, but a fall of a foot in thirty is most desirable, by which the ground is sufficiently elevated, yet not too much so.

An exposure declining towards the south, is that approved of by Switzer, "but not more than six inches in ten feet. Two or three inches he considers better."

An open aspect to the east, Abercrombie observes, "is itself a point of capital importance in laying out a garden, or orchard, on account of the early sun. When the sun can reach the garden at its rising, and continue a regular influence, increasing as the day advances, it has a *gradua*

and most beneficial effects in dissolving the hoar frost, which the past night may have scattered over young buds, leaves, and blossoms or setting fruit. On the contrary, when the sun is excluded from the garden till about ten in the morning, and then suddenly darts upon it, with all the force derived from considerable elevation, the exposure is bad, particularly for fruit-bearing plants, in the spring months; the powerful rays of heat at once melt the icy particles, and immediately acting on the moisture thus created, scald the tender blossoms, which drop as if nipped by a malignant blight; hence it happens, that many a healthy tree, with a promising show of blossoms, fails to produce fruit; the blossoms and thawed frost sometimes falling together in the course of the morning. The covering of the hoar frost, or congealed dew, is otherwise of itself a remarkable preservative of the vegetable creation from frosty winds."

An exposure in which is a free admittance for the sun and air, is required by Forsyth, who rejects a place surrounded by woods as very improper, because a foul, stagnant air is very unfavourable to vegetation; and it is also observed that blights are much more frequent in such situations than in those that are more open and exposed. Such an exposure will generally be to the south, but much depends on the surrounding scenery. For this reason the northern boundary of a garden, where the hot-beds are generally placed, will admit most sun and air, in proportion to the open space, when of a rounded, rather than an angular form; especially, if the plantation which surrounds the garden gradually decline in height as it approaches the hot-bed ground on the north, and the surrounding walk on the other sides.

If there be any slope in the area of a garden, Marshall considers "it should be southward, a point to the east or west not much signifying; but not to the north if it can be avoided, because crops come in late, and plants do not stand the winter so well in such a situation. A garden with a northern *aspect* has, however, its advantages, being cooler for some summer productions, as strawberries, spring-sown cauliflowers, &c.; therefore, to have a little ground under cultivation, so situated, is desirable, especially for late succession-crops."—*Ency. Gardening.*

(To be continued.)

Art. II.—*On the Management of Farm-yard Dung.*

The basis of farm-yard dung is straw, to which is added in its progress through the farm-yard, the excrementitious substances of live stock. From every ton of dry straw, about three tons of farm-yard dung may be obtained, if the after-management be properly conducted; and, as the weight of straw per acre, runs from one ton to one and a half, about four tons of dung, on an average of the different crops, may be produced from the straw of every acre under corn. Hence (it may be noticed) the great importance of cutting corn as low as possible; a few inches at the root of the stalk weighing more than double the same length at the ear.

The conversion of straw into farm-yard dung in the farmery, is thus effected:—The straw is served out to cattle and horses in the houses and fold-yards, either as provender or litter, and commonly for both purposes; turnips in winter, and green clover in summer, are given to the stock both in the houses and yards; on this food the animals pass a great deal of urine, and afford the means of converting the straw into a richer manure than if it were eaten alone. All the dung from the houses, as they are cleaned out, is regularly spread over the yards, in which young cattle are left loose, where litter is usually allowed in great abundance; or over the dunghill itself, if there be one at hand. This renders the quality of the whole mass more uniform; and the horse-dung, which is of a hot nature, promotes the decomposition of the woody fibres of the straw.

The preparation of the contents of the farm-yard for laying on the land, is by turning it over; or, what is preferable, carting it out to a dunghill. The operation of carting it out is usually performed during the frosts of winter; it is then taken to the field in which it is to be employed, and neatly built in dunghills of a square form, three or four feet high, and of such length and breadth, as circumstances may require. What is laid up in this manner early in winter, is commonly sufficiently prepared for turnips in June; but if it be not carried from the straw-yards till spring, it is necessary to turn it once or oftener, for the purpose of accelerating the decomposition of the strawy part of the mass. When dung is applied to fallows in July or August, preparatory to autumn sown wheat, a much less

degree of putrefaction will suffice than for turnips; a clay soil, on which alone fallows should ever be resorted to, not requiring dung so much rotted as a finely pulverized turnip soil; and besides, as the wheat does not need all the benefit of the dung for some time, the woody fibres are gradually broken down in the course of the winter, and the nourishment of the plant, continue till spring, or later, when its effects are most beneficial.

"In the application of farm-yard dung to land under tillage, particular attention is paid to the cleanliness of the soil; and to use it at the same time when, from the pulverization of the ground, it may be most intimately mixed with it. The most common time of manuring with farm-yard dung is, therefore, either towards the conclusion of the fallowing operations, or immediately before sowing of fallow crops. If no dung can be procured but what is made from the produce of the farm, it will seldom be possible to allow more than ten or twelve tons to every acre, when the land is managed under a regular course of white and green crops; and it is thought more advantageous to repeat this dose at short intervals than to give a larger quantity at once, and at a more distant period in proportion." Farm-yard dung, it is well known, is greatly reduced in value by being exposed to the atmosphere in small heaps, previous to being spread, and still more after being spread. Its rich juices are exhaled by the sun, or washed away by the rains, and the residuum is completely worthless. This is in an especial manner the case with long fresh dung, the far greater part of which consists of wet straw in an entire state. All careful farmers, accordingly, spread and cover in their dung with the plough, as soon as possible after it is brought on the land.

The use of fresh dung is decidedly opposite to the practice of the best farmers of turnip soils; its inutility, or rather injurious effects, from its opening the soil too much, is a matter of experience with every one who cultivates drilled turnips on a large scale. As the whole farm-yard dung, on such land, is applied to the turnip crop, it must necessarily happen, that it should be laid on in different stages of putrefaction; and what is made very late in spring, often after a very slight fermentation, or none at all. The experience of the effect of recent dung is accordingly very general, and the result, in almost every case, is, that the growth of the young plants is slow; that they remain long in a feeble and

doubtful state; and that they seldom, in ordinary seasons, become a full crop, even though twice the quantity that is given of short muck has been allowed. On the other hand, when the manure is considerably decomposed, the effects are immediate, the plants rise vigorously, and soon put forth their rough leaf, after which the beetle or fly does not seize on them; and in a few weeks, the leaves become so large, that the plants probably draw the greatest part of their nourishment from the atmosphere. Though it were true, therefore, that more nutritive matter were given out by a certain quantity of dung, applied in a recent state, and allowed to decompose gradually in the soil, than if applied after undergoing fermentation and putrefaction, the objection arising from the slowness of its operation, would, in many instances, be an insuperable one with farmers. But there seems reason to doubt whether fresh, strawy manure would ferment much in the soil, after being spread out in so small a quantity as has been already mentioned: and also, whether, in the warm dry weather of summer, the shallow covering of the earth given by the plough would not permit the gaseous matter to escape, to a much greater amount than if fermentation had been completed in a well built covered dunghill.

Another great objection to the use of fresh farm-yard dung is, that the seeds and roots of those plants with which it commonly abounds, spring up luxuriantly on the land; and this evil nothing but a considerable degree of fermentation can obviate. The mass of materials consists of the straw of various crops, some of the grains of which, after all the care that can be taken, will adhere to the straw; of the dung of different animals voided, as is often the case with horses fed on oats, with the grain in an entire state; and of the roots, stems, and seeds of the weeds that had grown among the straw, clover, and hay, and such as had been brought to the house and fold-yards with the turnips and other roots given to live stock.

The degree of decomposition to which farm-yard dung should arrive, before it can be deemed a profitable manure, must depend on the texture of the soil, the nature of the plants, and the time of its application. In general, clayey soils, are more tenacious of moisture, and more benefited by being rendered incohesive and porous, may receive manure

less decomposed than well pulverised turnip soils require. Some plants too, seem to thrive better with fresh dung than others, potatoes in particular; but all the small-seeded plants, such as turnips, clover, carrots, &c. which are extremely tender in the early stage of their growth, require to be pushed forward into luxuriant vegetation with the least possible delay, by means of short dung.

The season when manure is applied, is also a material circumstance. In spring or summer, whether it be used for corn or green crops, the object is to produce an immediate effect, and it should, therefore, be more completely decomposed than may be necessary, when it is laid on in autumn for a crop whose condition will be almost stationary for many months.—*Enc. Agriculture.*

Art. III—*Manure from Swine—How to increase the quantity.*

The dung of swine is very rich and fat manure, and so cold as to ferment very slowly. It is so rich and oily as to be double in value to neats dung. It will render the most dry and hungry soils exceedingly fruitful in a wettish season, as I have found by experience. It resists the ill effects of drought and does most service in a hot country. By its steady and gradual supply of a rich nourishment, it is particularly adapted for the growing of hops, pumpkins, running beans, and every plant which has long vines. Nothing can equal it for the growing of potatoes; it has produced me more than a peck in a hill, on the poorest hungry sands; or rather, I might say, straw only a little impregnated with the dung of hogs has done it. This is so strong a manure, that it answers well when mixed with a large proportion of earth, weeds, straw or other bibulous substances. It is almost incredible how great a quantity of good manure may be obtained, by supplying a hog-stye with rubbish to mix with the dung. I have heard of forty loads of manure being made in the year by means of one hog-stye, and I have no doubt of its being practicable.

Boston Gazette.

PART III.

MISCELLANEOUS AGRICULTURAL ITEMS.

South-Carolina.—At the last session of the Legislature of this State, a Memorial was presented from N. Herbemont, Esq. of Columbia,—Representing that the pine lands of this State are capable "of producing great crops of Wine, Silk, and other objects usually produced in similar latitudes." The difficulties attending their introduction, especially of vineyards, and submitting to the Legislature, the propriety of importing a number of vignerons from France, Italy, Germany and Switzerland, and establishing them in small communities in different sections of the State. The following is taken from the Report of the Committee on Agriculture to the House of Representatives.

"After a series of experiments sustained for eighteen years, with a public spiritedness which reflects upon his character the highest honor; and which will entitle him to be ranked among the benefactors of his country; the labours of Mr. Herbemont has been rewarded with success so ample and satisfactory, as entirely to remove from the minds of your Committee, every doubt as to the congeniality of our climate and soil, to the growth of the vine. From a small vineyard in the vicinage of this place, this gentleman has made for the last two years, in proportion of three hundred gallons of good wine to the acre annually; each gallon of which will readily command the price of $2. Four acres can be planted and attended by a single labourer, who would thus be able to earn the enormous annual profit of $2400; and this too from land which could at present be purchased for twenty-five cents per acre."

The Report of the Committee on Agriculture to the Senate, is published entire; as it contains not only considerable information, but also, a very just tribute to Mr. Herbemont, who has laboured so long and earnestly in this cause.

"The Committee on Agriculture, to whom was referred the Memorial of Alexander Herbemont, beg leave to Report, that among the means calculated to advance the agricultural interest of South-Carolina, the subject to which the memorialist has invited the attention of the Legislature, is one of the most important and interesting. The depreciation in the value of cotton, the improbability of any future amelioration in the price of that commodity, the admirable adaptation of an immense area of the

lands of the State to the culture of the vine, the full and satisfactory experiments in reference to this new branch of industry, all concur to favour the belief that the period has arrived when the competent authorities should inquire, whether our agricultural products shall continue to descend in the scale of value, or whether it is not expedient to divert, by legislative bounty, a portion of the capital now engaged in unprofitable labour, and direct it where it can be more advantageously employed? The landed capital of South-Carolina is, in effect, smaller than that of any State in the Union. Of about 16,000,000 of acres, which its territorial limits embrace, there are less than 1,300,000 actually cultivated. It is conceded that the State furnishes at least 5,000,000 of acres, which if not subjected to the raising of the vine, is, perhaps, destined to perpetual sterility, with regard to the known productions of our country. It is on such land, valued at from ten cents to five dollars an acre, that the memorialist realized, the present and past years, at the rate of three hundred gallons per acre, of wine, for which he has readily commanded two dollars per gallon. Admitting that a reduction in price will necessarily result from its extended cultivation, and that the period will arrive when domestic wines will be vended for twenty-five cents a gallon, yet retrospective considerations induce the Committee to infer, that it would then be viewed as one of the most profitable investments of capital. To say that every effort which may be used to bring about this desirable state of things, is laudable and patriotic, is but to flatter at the expense of words. The public attention has been literally forced to this subject of general interest by the unwearied perseverance, untiring industry, and botanical research of the memorialist. In the furtherance of his views, he visited France a few years ago, at a very considerable expense, and on his return he presented to his adopted country, two hundred and sixty-four varieties of the vine, as a testimonial of gratitude for the political blessings he enjoyed. Since that period he has laboured zealously in his vocation, and from present indications, South-Carolina will yet have ample cause to rank the memorialist among her distinguished benefactors. Impressed with this conviction, the Committee cannot restrain the expression of their regret, that the present financial condition of the State will deter them from recommending, at this session, any appropriation in aid of the highly commendable and benevolent scheme of the memorialist. They, therefore, beg leave to submit the following resolution, to wit:

Resolved, That it is expedient to encourage the cultivation of the vine in this State, but that the condition of the Treasury will not authorise the appropriation of money for that purpose at this time.

WHITEMARSH B. SEABROOK, *Chairman.*

Pennsylvania Farmers.—The senior Editor of the "Register," lately spent one day in the delightful county of Bucks. A man, from many parts of our country, wherein vast tracts of naturally fertile land have been turned into desert places by miserable cultivation, would think himself as in another world, if secretly transported, and for the first time placed on some of the rising grounds in this county, from which, on every side, he may behold the stately stone houses and big barns of the farmers, seated in the midst of plenty—while almost every animal that he meets, man, woman or child, horses or cattle, shows the comfort and abundance that reward the toil of the cultivators of their own fields in any part of the United States. Lands are worth from 50 to 75 dollars per acre, even at their present depressed value.

The following statistical items were furnished by the intelligent and respectable farmer with whom I passed the day, and I am certain that he wished rather to diminish than to exaggerate them.

Two full hands and a boy, employed the whole year, and two additional hands for one month, during the hay-making and harvest, with two working horses, and two oxen, are esteemed competent, (with the farmer's own care and occasional help to keep things in order,) to manage a farm of 180 or 200 acres; about a tenth part of which being in wood. The two hands cost 100 or 90 dollars a year, respectively, the boy is clothed and fed, and the harvest-hands cost 11 dollars each per month, besides subsistence.

On such a farm and with these aids, the season being *usually* good, the following articles may be, and are produced—1000 bushels of corn, 350 bushels of wheat, 1200 bushels of oats, 100 bushels of rye, 300 bushels of potatoes, with some flax or clover seed, &c. 15 steers of 600 lbs. each, fatted for the market, and 3000 lbs. of pork made for sale, besides, as to beef and pork, what is required for family use. Six or seven cows, and two or three horses are kept. The steers and pork, as just stated, are sold, together with 500 bushels of corn, nearly 300 of wheat, 800 of oats, 200 of potatoes, 60 of rye, with several other small articles, amounting to a considerable sum; and the products of the orchards, being made the most of by the same hands employed, sometimes yield the value of 300 dollars a year, chiefly obtained for fruit sold, cider made, or whiskey distilled. The family of the farmer consists of about twelve persons, all told, and they have abundance of the good things of this life, and liberally partake of its luxuries. The people in general are clean and tidy, with rosy cheeks and hard hands, and it did my heart good to look at the neatly and comfortably clad children, as they playfully passed to or from their schools.

When my friend had furnished the preceding facts, as generally applicable to the farmers in his neighbourhood, I told him that our Southern people would not believe them—but he observed, "they were no less true on *that* account." He has a flock

of sheep, and might considerably increase it with very small additional expense for labour; but said they were not worth having at the present time, because of the low price of wool.

The rotation of the principal crops are as follows :—corn, oats, wheat, rye, hay, pasture.—*Niles' Register.*

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Cultivation Without Dung.—M. Corvaillé, of Toulouse, has published a pamphlet, in part a translation from the Italian, to show that this may be effected by burying in the soil half grown crops. He gives an example of a field in Peidmont, which was divided in two equal parts; on one of these, rye sown in November, was ploughed down on the 5th of May following; at the same time the other half was well manured with stable dung. Both were sown with maize, and treated with the same care. At harvest, the produce of the crop grown on the ploughed down rye, exceeded that grown on the dung in the proportion of 425 to 300. M. Jourbert, of Turin, who made the experiment, thinks rye the best of all plants for ploughing in; but it does not follow from the above experiment, that burying living vegetables is to be preferred to manuring, because the effects of the latter last for three or four years, while that of ploughing-in growing plants is seldom perceptible on a second crop. We have no doubt, however, that if the poorest land had such crops as were grown upon it ploughed down when they were half arrived at maturity, for a series of years in succession, it would in the end become rich. But how many years it would require to effect this is very uncertain.—*Gard. Mag.*

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Agricultural Establishment.—An Agricultural Establishment under the patronage of the king of France, and a council of ten persons, has been formed for the purpose of improving a portion of the government territory, valued at a million of louis. (*Constitutionnel, April* 28, 1826.) Another company is proposed to be formed for embanking certain lands in the province of Britainy. There are to be a great number of shares, and great profits are of course promised.—*Bull. des Sciences Agricoles, Mai*, 1826.

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The Cow Tree.—This tree, which has been named Galactodendron, and appears to belong to the family of Sapoteæ, grows on rocky declivities on the northern Andes. Its leaves are large, oblong, thin, dry, and coriaceous. "Its thick ligneous roots scarcely enter the rock; for several months in the year rain scarcely waters its fanshaped leaves. The branches appear dry and dead. But when an incision is made in the trunk, a sweet and nutritious milk runs from it. It is at sun-rise that the vegetable liquid runs most abundantly. Then the natives and negroes are seen to come from all parts provided with vessels to receive the milk, which becomes yellow, and thickens at the sur-

face. This vegetable milk possesses all the physical properties of the milk of animals, only it is a little thicker, and mixes easily with water. When boiled it does not coagulate, but a thick yellow pellicle is formed on the surface. Acids do not form with this milk any coagulum as with that of the cow."—*Humbold, Voyage aux Regions Equinoziales du Nouveau Continent*, lib. v. chap. 16. pp. 263–264.

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Prangos Hay Plant.—This is a perennial herbaceous plant belonging to the Umbelliferæ, nearly allied to Cachrys, and named by Mr. Lindley, Prangos pabularia. It has a large fleshy root stock, and finely cut leaves, about two feet long, which constitute the fodder. It is cultivated in Thibet, and employed in the form of hay as a winter fodder for sheep and goats. It is considered to be at least as durable as Lucern, and may probable become a valuable plant in several British colonies. Seeds sent to this country had lost their vegetative power, but from various facts it is conjectured, that the Prangos may become an agricultural plant of this country.—*Lindley in Jour. of R. Instit.* No. 37.

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Distillation from Plumbs.—An excellent spirit is obtained from the bruised pulp and kernel, fermented with honey and flour, and distilled in the usual manner.—*Jour. du Midi. Fevrier*, 1825.

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Culture of Silk in Sweden.—This it seems was attempted a number of years ago, and in 1823 was renewed. The mulberry grows very well in some of the provinces, and the silk produced is said be of a finer and stronger quality than that of India. The silk produced in Bavaria is in like manner said to be superior to that of Italy.

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Remarkable Calves.—The four Calves (three heifers and a bull) produced at one birth, by a poor man's cow near Lellinch, as stated by us last week, are still living, quite stout, and likely to continue so. Several ladies and gentlemen from this town who were near this place, went to see them, and state that they appear of good size, full as large as single calves often produced by such cows as the dam. We do not recollect ever before having heard of more than two calves produced at a birth, and they are curious facts, that in cases of twin calves, it is observed they have but one kidney each, and if of different sexes one or other of them uniformly proves barren, being what is called a free martin. Therefore those calves and their subsequent history, are well worthy of the notice of the zealous naturalist, and should they live, may we hope prove more than commonly beneficial to the owner by their being in requisition with philosophers.—*Ennis paper.*

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